James & Anne Robinson Nature Center

Howard County Recreation & Parks
Robinson Nature Center
6692 Cedar Lane, Columbia, MD 21044
www.howardcountymd.gov/RobinsonNatureCenter.htm
410-313-0400

World To A River Dweller –
Teacher Pre-visit information

Concepts

We are part of a large watershed. All of the creatures in our watershed are affected by our actions. We will look at ways that we can help make our watershed less polluted. We will explore a river habitat and look for aquatic macroinvertebrates there.

Program Activities

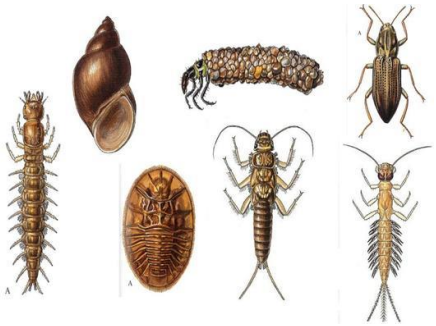
The indoor introduction explains what a watershed is and looks at a map of our vast watershed. We use a landscape model to explore ways that humans pollute the environment and ways to limit the impact of human activities. Higher grade levels, also look at a food chain that includes river dwellers.

During the outdoor hike, students visit three areas that relate to the indoor activities. They explore the river and its inhabitants and are asked to evaluate the relative health of our river based on their findings.

Previsit Suggestions

Read *Over in the Ocean: In a Coral Reef* by Marianne Berkes and Jeanette Canyon
or
River Animals (Animals in Their Habitats) by Francine Galko

Briefly discuss what happens to land when it rains and how the rivers look different after a rain storm.



Vocabulary

Erosion - The process by which wind, water, or other natural agents wear down or break down matter

Herbicide - A substance that is toxic to plants and is used to destroy unwanted vegetation

Macroinvertebrate - organisms without backbones which are visiblewithout the aid of a microscope.

Pesticide - A substance used for destroying insects or other organisms harmful to cultivated plants or to animals.

Pollutants - any substance that makes air, soil, water, or other natural resources harmful or unsuitable for a specific purpose

Point source pollution – Pollution that comes from a single, easily identified place; i.e. a sewage pipe

Nonpoint source pollution – Pollution from diffuse sources that is washed into waterbodies by run-off

Riparian Buffer – a vegetated area (a "buffer strip") near a stream, usually forested, which helps shade and partially protect a stream from the impact of adjacent land uses

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World to a River Dweller – Teacher Post-visit information

Dear Teacher,

We hope you enjoyed your recent field trip to the Robinson Nature Center. To help with follow-up in the classroom, we have developed the following post-visit materials:

1) Follow-up discussion
2) Follow-up activities

Follow-up Discussion

1) What is the name of the watershed in which we live?
    a. Chesapeake Bay Watershed
2) Define watershed.
3) The area of land where all of the water that is under it or drains off of it goes into the same water body. Name one example of point source pollution and how humans can prevent it.
    a. Manufacturing plants – have strong regulations about treating waste water leaving manufacturing plants.
    a. Water treatment plants – make sure to conserve water by taking only short showers, using low-flow toilets, washing cars less, watering lawns less, only running dishwasher and washer when it is full, and turning off water when brushing teeth.
4) Name one example of nonpoint source pollution and how humans can prevent it.
    a. Storm drains – do not dump anything down storm drains (oil, chemicals, etc.) Make sure cars are maintained well.
    b. Trash - Pick up trash when you see it on the ground.
    c. Manure - Pick up after your pets. Make sure farms are using best management practices.
    d. Soil – make sure there are erosion control measures in place at construction sites, clear cutting isn't happening, and farm fields have riparian buffers, wetlands and rain gardens
    e. Pesticides and Herbicides – limit the use of these by homeowners, farmers and golf courses

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5) Name two macroinvertebrates.
    a. Stonefly larvae
    b. Caddisfly larvae
    c. Mayfly larvae
    d. Dobsonfly larvae
    e. Adult riffle beetle
    f. Gilled snail
    g. Damselfly larvae
    h. Cranefly larvae
    i. Riffle beetle larva
    j. Clam
    k. Crayfish
    l. Dragonfly larvae
    m. Scud
    n. Sowbug
    o. Midge fly larvae
    p. Lunged snail
    q. Blackfly larvae
    r. Aquatic worm
    s. Leech
    t. Waterpenny larvae

6) Why are macroinvertebrates important?
    a. Base of food chain for many creatures in the food web

Follow-up Activities

1) Briefly discuss different types of pollution. (Air, water, light, soil, noise, personal, thermal, visual) Discuss ways to prevent or fix these pollution examples.
2) Take a walk around your schoolyard picking up trash and recycling items that can be recycled. See if there is a stream on your school yard property and make sure there is no trash in the stream.
3) If you find a stream on your schoolyard, survey it for macroinvertebrates to determine the health of the stream.